

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An antenna branch selector for selecting for processing at least one of a plurality of antenna branches each coupled to a respective receive antenna and carrying a received signal, said antenna branch selector comprising:

a signal selector having a plurality of inputs to receive signals from said plurality of antenna branches and having an output to output a selected signal for processing;

a time-to-frequency domain converter configured to receive a time domain signal from each of said plurality of antenna branches and to provide a corresponding frequency domain output signal; and

a controller coupled to said time-to-frequency domain converter and to said signal selector to control said signal selector to select ~~a said~~ an antenna branch from said plurality of antenna branches responsive to a measure of multipath fading for the received signals determined from said corresponding frequency domain output signal.

Claim 2 (Currently Amended): An antenna branch selector as claimed in claim 1, wherein said controller is configured to select [[a]] said antenna branch from said plurality of antenna branches responsive to a difference between a signal level at a first frequency and a signal level at a second frequency in a [[said]] frequency domain output signal for an antenna branch.

Claim 3 (Currently Amended): An antenna branch selector as claimed in claim 2, wherein said first and second frequencies comprise frequencies of said received signal corresponding to said selected antenna branch.

Claim 4 (Currently Amended): An antenna branch selector as claimed in claim 3,
wherein [[a]]

said received signal corresponding to said selected antenna branch has, in the
frequency domain, at least two tones, and ~~wherein~~

said first and second frequencies comprise frequencies of said at least two tones.

Claim 5 (Currently Amended): An antenna branch selector as claimed in claim 4,
wherein

said received signal corresponding to said selected antenna branch comprises a packet
data signal including a preamble signal portion, and ~~wherein~~

said at least two tones comprise tones of said preamble signal portion.

Claim 6 (Currently Amended): An antenna branch selector as claimed in claim 5,
wherein said received signal corresponding to said selected antenna branch comprises a
Bluetooth compatible signal.

Claim 7 (Currently Amended): An antenna branch selector as claimed in claim 2,
wherein said controller is configured to select [[a]] said antenna branch from said plurality of
antenna branches responsive to a comparison of said difference in signal ~~level~~ levels between
said first and second frequencies for one ~~said~~ antenna branch from said plurality of antenna
branches with said difference in signal ~~level~~ levels between said first and second frequencies
for another ~~said~~ antenna branch from said plurality of antenna branches.

Claim 8 (Currently Amended): An antenna branch selector as claimed in claim 3,
wherein

said controller is further configured to determine an indication of received power for a said antenna branch, and ~~wherein~~

said controller is further configured to select ~~[[a]]~~ said antenna branch from said plurality of antenna branches responsive to said received power indication.

Claim 9 (Currently Amended): An antenna branch selector as claimed in claim 3, wherein said controller is further configured to select ~~[[a]]~~ said antenna branch responsive to a difference between signal levels in said frequency domain signal for an antenna branch at a third frequency comprising a frequency of said received signal and at a fourth frequency comprising a frequency at which substantially no signal level from said received signal is expected.

Claim 10 (Currently Amended): An antenna branch selector as claimed in claim 8, wherein said controller is responsive to a sum of signal levels at a plurality of said third frequencies.

Claim 11 (Currently Amended): An antenna branch selector as claimed in claim 1, wherein
said received signal comprises a packet data signal including a payload signal portion,
and ~~wherein~~
said controller is further configured to control said signal selector during said payload signal portion.

Claim 12 (Currently Amended): An antenna branch selector as claimed in claim 11, wherein said controlling of said signal selector during said payload signal portion is

conditional upon a Doppler frequency shift of said received signal being greater than a threshold value.

Claim 13 (Original): A receiver including the antenna branch selector of claim 1.

Claim 14 (Currently Amended): ~~Processor control code to, when running implement the antenna branch selector of claim 1~~ A computer readable medium including computer executable instructions, which when executed by a processor, cause the processor to perform a method comprising:

transforming a received signal from each antenna in said plurality of antennas from the time domain to the frequency domain;

determining a measure of multipath fading for the received signal from each antenna from said frequency domain transformed signal; and

selecting a received signal responsive to said determined measure of multipath fading.

Claim 15 (Currently Amended): A method of selecting a received signal from an antenna of an antenna system ~~comprising~~ including a plurality of antennas, the method comprising:

transforming a received signal from each said antenna in said plurality of antennas from the time domain to the frequency domain;

determining a measure of multipath fading for the received signal from each [[said]] antenna from said frequency domain transformed signal; and

selecting a received signal responsive to [[a]] said determined measure of multipath fading.

Claim 16 (Currently Amended): A method as claimed in claim 15, wherein said determining comprises comparing signal levels of said selected received signal at two or more frequencies.

Claim 17 (Currently Amended): A method as claimed in claim 16, wherein said selected received signal comprises a packet data signal including a preamble portion, and wherein said determining is performed during a detection of said preamble signal.

Claim 18 (Currently Amended): A method as claimed in claim 17, wherein said two or more frequencies comprise tones of said preamble signal.

Claim 19 (Currently Amended): A method as claimed in claim 15 further comprising: determining a measure of received signal strength[,] for [[the]] each received signal from each ~~said~~ antenna from said plurality of antennas using said frequency domain transformed signal, [[and]] wherein said selecting is further responsive to [[a]] said determined measure of received signal strength.

Claim 20 (Currently Amended): A method as claimed in claim 15 further comprising: determining a measure of received signal to noise and/or interference ratio[,] for [[the]] each received signal from each ~~said~~ antenna from said plurality of antennas using said frequency domain transformed signal, [[and]] wherein said selecting is further responsive to said determined measure of received signal to noise and/or interference ~~ratio~~ ratio.

Claim 21 (Currently Amended): A method as claimed in claim 17, wherein said packet data signal includes a payload portion, and said method further comprising:
monitoring a received signal indicator during reception of said payload portion; and
selecting a received signal responsive to said monitoring.

Claim 22 (Currently Amended): A method as claimed in claim 21 further comprising:
monitoring a received signal frequency change parameter, [[and]]
wherein said selecting of [[a]] the received signal responsive to said monitoring is responsive to said frequency change parameter.

Claim 23 (Currently Amended): A system for selecting a received signal from an antenna of an antenna system comprising a plurality of antennas, said received signal ~~comprising~~ including a packet data signal including preamble and payload signal portions, the system comprising:

means for selecting said received signal responsive to a received signal parameter measured during said preamble signal;

means for determining a Doppler frequency change of said received signal; and

means for reselecting said received signal during said payload signal conditional upon said determined Doppler frequency change being greater than a threshold frequency change.

Claim 24 (Currently Amended): A method of selecting a received signal from an antenna of an antenna system comprising a plurality of antennas[[;]], said received signal comprising a packet data signal including preamble and payload signal portions, the method comprising:

selecting said received signal responsive to a received signal parameter measured
during said preamble signal;
determining a Doppler frequency change of said received signal; and
~~means for reselecting~~ said received signal during said payload signal conditional upon
said determined Doppler frequency change being greater than a threshold frequency change.

Claim 25 (Original): A method as claimed in claim 24 wherein said threshold
frequency change is dependent upon the duration of a said packet.